

REMARKS

Claim 5 is added to recite the invention of claim 4, where in the amounts of components (b), (c), and (d), relative to (a), are those recited in the claim. Support for this claim can be found at, for example, original claim 2.

Claim 6 is added to recite that the metal other than alkali metals include, Cu, Fe, Ni, Zn, Ca, Mg, and Mn. Support for this claim can be found at, for example, page 8, lines 12-14 of the present specification.

Claims 1 and 2 are canceled.

Upon entry of the above amendment, which is respectfully requested, claims 4 and 5 will be pending.

At Paragraph No. 7 of the Action, claims 1, 2, and 4 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over “Catena” (U. S. Patent No. 5,256,450) in view of “Yang” (U. S. Patent No. 5,039,767).

The Examiner cites Catena as teaching all the recitations of claim 1, except the Examiner acknowledges that Catena does not disclose a complex of a metal other than alkali metals and ethylenediaminetetraacetic acid, or a complex of a metal other than alkali metals and diethylenetriaminepentaacetic acid. The Examiner relies on Yang to teach that transition metals, especially copper or iron, play an important part in the cure mechanism of peroxide initiated acrylic formulations to produce free radicals from peroxy initiators. In particular, manganese, iron, cobalt and vanadium salts may be incorporated into such formulations.

The Examiner concludes that it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate transition metal salts such as manganese, iron, cobalt and vanadium salts, as taught by Yang, in Catena's anaerobic curable

composition comprising a complex of a metal and ethylenediaminetetraacetic acid for obtaining the claimed complex of a metal other than alkali metals and ethylenediaminetetraacetic acid because manganese, iron, cobalt and vanadium salts together with o-benzoic sulfimide have accelerated cure rates.

Applicant respectfully traverses.

There is no teaching, suggestion, motivation, or other apparent reason to substitute the metals of Yang for the sodium in the tetrasodium ethylenediamine tetraacetate complex of Catena.

The Examiner cites Yang as disclosing that it has been long been known that transition metals may play a part in the redox reaction that produces free radicals from peroxy initiators.

However, this does not mean that a person of ordinary skill in the art would recognize Mn, Fe, Co, Cu, or V as readily interchangeable with Na for redox reactions. For example, the oxidation state of Na goes from zero to (+1), where as the oxidation states go to +2, +3, and +4 for Mn; to +2, +3, and +5 for Fe; +2, +3, and +4 for Co; and +1 and +2 for Cu, and +2, +3, and +4 for V. See <<http://scienceworld.wolfram.com/chemistry/MetalOxidationStates.html>>, (accessed on March 16, 2010).

Indeed, this difference in the reactivity of such metals was actually part of the problem that Applicant was faced with at the time of the invention. For example, copper ions and vanadium ions could not be present in curing compositions, because these metals caused organic peroxide to decompose prematurely, so that gelation is caused. See page 3, lines 13-21 of the present specification. Thus, the results of using transition metals such as copper or vanadium would discourage a person of ordinary skill in the art from substituting them into the

ethyenediaminetetraacetate of Catena, because these metals are too reactive and might cause premature gelation. Therefore, based on the differences in reactivity between Na and Mn, Fe, Co, Cu, or V, a person of ordinary skill in the art would not have substituted the metals of Yang into the ethyenediaminetetraacetate of Catena with a reasonable expectation of success.

In view of the above, Applicant respectfully submits that no *prima facie* case of obviousness has been established.

However, even if a *prima facie* case of obviousness has been established, which it has not, the presently claimed invention exhibits unexpectedly superior results over the mere use of Na alone in ethyenediaminetetraacetate that rebut such a *prima facie* case of obviousness. Although the Examiner cites Catena as teaching that tetrasodium ethyenediaminetetraacetate acts as an accelerant, Applicant has found that where the metal forming a complex is just an alkali metal, a beneficial effect of the presently claimed invention is not obtained. See page 8, lines 4-6 of the present specification. Namely, an adhesive composition capable of rapid curing without sacrificing storage stability. See page 3, lines 22-26 of the specification.

To establish this point, Mr. Kaneta, the named inventor, submits herewith a Declaration Under 37 C.F.R. § 1.132 that points to evidence of unexpectedly superior adhesion and curing times over a “Blank” that is as close as or closer to the presently claimed invention than Catena.

Referring to MPEP § 716.02(e)(I), Applicant may compare the claimed invention with an example that is more closely related to the invention than the prior art relied upon by the Examiner. For example, the Board of Patent Appeals and Interferences found that evidence of unexpected results rebutted a *prima facie* case of obviousness, where a 13-chloro substituted compound was compared with evidence of a 9-, 12-, and 14- chloro derivatives, because “the compounds compared against were closer to the claimed invention than the prior art relied

upon.” See *Ex Parte Humber* 217 USPQ 265 (Bd. App. 1961). In other words, Applicant is not required to submit evidence of unexpectedly superior results over either Catena or Catena in view of Yang.

Referring to page 2 of the Declaration, Samples were prepared using EDTA·2 Na·M, where M is a metal other than alkali metals. In contrast, the Blank was prepared using EDTA·2Na, without a metal other than alkali metals. See second full paragraph on page 3 of the Declaration. As shown in the bar graphs on pages 3-5 of the Declaration, the Samples having a metal other than alkali metals showed faster curing time across a broad variety of substrates (adherends) than the Blank, which does not have a metal other than alkali metals. Further to the faster curing rates for zinc chromate as a substrate, on page 6 of the Declaration, the Samples having EDTA·2Na with a metal other than alkali metals are observed to have higher adhesive strength than that of the Blank, which does not have a metal other than alkali metals.

Based on this experimental evidence, Mr. Kaneta is able to conclude that EDTA·2Na and a metal other than alkali metals exhibits faster curing to a variety of substrates as well as stronger adhesion than EDTA·2Na that does not have a metal other than alkali metals.

Thus, Applicant respectfully submits that the presently claimed invention exhibits unexpectedly superior curing times and adhesive strengths and that this evidence of unexpectedly superior results rebuts any alleged *prima facie* case of obviousness the Examiner may have established.

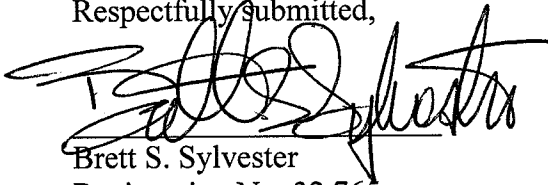
Claims 1 and 2 have been canceled, which renders this aspect of the rejection moot.

In view of the above, claims 4 and 5 are non-obvious. Reconsideration and withdrawal of the § 103(a) obviousness rejection are respectfully requested.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

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Date: March 22, 2010